Notice of Construction Application

A notice of construction permit is required before installing a new source of air pollution or modifying an existing source of air pollution. This application applies to facilities in Ecology's jurisdiction. Submit this application for review of your project. For general information about completing the application, refer to Ecology Forms ECY 070-410a-g, "Instructions for Ecology's Notice of Construction Application."

Ecology offers up to two hours of free pre-application assistance. We encourage you to schedule a pre-application meeting with the contact person specified for the location of your proposal, below. If you use up your two hours of free pre-application assistance, we will continue to assist you after you submit Part 1 of the application and the application fee. You may schedule a meeting with us at any point in the process.

Upon completion of the application, please enclose a check for the initial fee and mail to:

Department of Ecology
Cashiering Unit
PO Box 47611
Olympia, WA 98504-7611

For Fiscal Office Use Only: 0299-3030404-B00-216--001--000404

Check the box for the location of your proposal. For assistance, call the appropriate office listed below:

Check box	Ecology Permitting Office	Contact
☐	**Chelan, Douglas, Kittitas, Klickitat, or Okanogan County** Ecology Central Regional Office (509) 575-2490	Lynnette Haller (509) 457-7126 lynnette.haller@ecy.wa.gov
☑	**Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Stevens, Walla Walla, or Whitman County** Ecology Eastern Regional Office (509) 329-3400	Karin Baldwin (509) 329-3452 karin.baldwin@ecy.wa.gov
☐	**San Juan County** Ecology Northwest Regional Office (206) 594-0000	David Adler (425) 649-7267 david.adler@ecy.wa.gov
☐	**For actions taken at Kraft and Sulfite Paper Mills and Aluminum Smelters Only** Ecology Industrial Section (360) 407-6900	James DeMay (360) 407-6868 james.demay@ecy.wa.gov
☐	**For actions taken on the US Department of Energy Hanford Reservation Only** Ecology Nuclear Waste Program (509) 372-7950	Lilyann Murphy (509) 372-7951 lilyann.murphy@ecy.wa.gov

Check the box below for the fee that applies to your application.

New project or equipment:

- [x] **$1,904: Basic project** initial fee covers up to 16 hours of review.
- [ ] **$12,614: Complex project** initial fee covers up to 106 hours of review.

Change to an existing permit or equipment:

- [ ] **$357: Administrative or simple change** initial fee covers up to 3 hours of review. Ecology may determine your change is complex during the completeness review of your application. If you project is complex, you must pay the additional xxx before we will continue working on your application
- [ ] **$1,190: Complex** change initial fee covers up to 10 hours of review
- [ ] **$350flat fee**: Replace or alter control technology equipment under WAC 173-400-114. Ecology will contact you if we determine your change belongs in another fee category. You must pay the fee associated with that category before we will continue working on your application.

Read each statement below, then check the box next to it to acknowledge that you agree.

- [x] The initial fee you submitted may not cover the cost of processing your application. Ecology will track the number of hours spent on your project. If the number of hours Ecology spends exceeds the hours included in your initial fee, Ecology will bill you $119 per hour for the extra time.
- [x] You must include all information requested by this application. Ecology may not process your application if it does not include all the information requested.
- [x] Submittal of this application allows Ecology staff to visit and inspect your facility.

Part 1: General Information

I. Project, Facility, and Company Information

1. Project Name: Notice of Construction Application Miscellaneous Metalworking Equipment Additions
2. Facility Name: Schweitzer Engineering Laboratories, Inc.
3. Facility Street Address:

   2350 NE Hopkins Ct., Pullman, WA, 99163

4. Facility Legal Description: Electronics Manufacturer
5. Company Legal Name (if different from Facility Name):

   _____

6. Company Mailing Address (street, city, state, zip)

   2350 NE Hopkins Ct.

II. Contact Information and Certification

1. Facility Contact Name (who will be onsite): Michael Robert
2. Facility Contact Mailing Address (if different than Company Mailing Address:

   _____

3. Facility Contact Phone Number: 509-592-7399
4. Facility Contact E-mail: michael_robert@selinc.com
5. Billing Contact Name (who should receive billing information):
   Accounts Payable
6. Billing Contact Mailing Address (if different Company Mailing Address):

7. Billing contact Phone Number:
8. Billing Contact E-mail: accounts_payable@selinc.com
9. Consultant Name (optional – if 3rd party hired to complete application elements):
   Not applicable
10. Consultant Organization/Company:
11. Consultant Mailing Address (street, city, state, zip):
12. Consultant Phone Number:
13. Consultant E-mail:
14. Responsible Official Name and Title (who is responsible for project policy or decision making):
    Mike Wilfong, Directory of Environmental, Health, and Safety
15. Responsible Official Phone: 509-592-7800
16. Responsible Official E-mail: mike_wilfong@selinc.com
17. Responsible Official Certification and Signature:

    I certify that the information on this application is accurate and complete.

Signature: Mike Wilfong Date: 5/15/2025

Part 2: Technical Information

The Technical Information may be sent with this application form to the Cashiering Unit, or may be sent directly to the Ecology regional office with jurisdiction along with a copy of this application form.

For all sections, check the box next to each item as you complete it.

III. Project Description

- [x] Written narrative describing your proposed project.
- [x] Projected construction start and completion dates.
- [x] Operating schedule and production rates.
- [x] List of all major process equipment and manufacturer and maximum rated capacity.
- [x] Process flow diagram with all emission points identified.
- [x] Plan view site map.
- [x] Manufacturer specification sheets for major process equipment components
- [x] Manufacturer specification sheets for pollution control equipment.
- [x] Fuel specifications, including type, consumption (per hour and per year) and percent sulfur.

IV. State Environmental Policy Act (SEPA) Compliance

Check the appropriate box below.

- [x] SEPA review is complete. Include a copy of the final SEPA checklist and SEPA determination (e.g., DNS, MDNS, and EIS) with your application.
- [ ] SEPA review has not been conducted:
  - [ ] If review will be conducted by another agency, list the agency. You must provide a copy of the final SEPA checklist and SEPA determination before Ecology will issue your permit. Agency reviewing SEPA: _____
  - [ ] If the review will be conducted by Ecology, fill out a SEPA checklist and submit it with your application. You can find a SEPA checklist online at https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-document-templates

V. Emissions Estimations of Criteria Pollutants

Does your project generate criteria air pollutant emissions? [x] **Yes** [ ] **No**

If yes, please proved the following information regarding your criteria emissions in the application.

- [x] The names of the criteria air pollutants emitted (i.e., NO_X, SO_2, CO, $PM_{2.5}$, PM_{10}, TSP, VOC, and Pb)
- [x] Potential emissions of criteria air pollutants in tons per hour, tons per day, and tons per year (include calculations)
- [x] If there will be any fugitive criteria pollutant emissions, clearly identify the pollutant and quantity

VI. Emissions Estimations of Toxic Air Pollutants

Does your project generate toxic air pollutant emissions? [x] **Yes** [ ] **No**

If yes, please provide the following information regarding your toxic air pollutant emissions in your application.

☑ The names of the toxic air pollutants emitted (specified in WAC 173-460-150[1])

☑ Potential emissions of toxic air pollutants in pounds per hour, pounds per day, and pounds per year (include calculations)

☐ If there will be any fugitive toxic air pollutant emissions, clearly identify the pollutant and quantity

VII. Emission Standard Compliance

☑ Provide a list of all applicable new source performance standards, national emission standards for hazardous air pollutants, national emission standards for hazardous air pollutants for source categories, and emission standards adopted under Chapter 70A.15 RCW.

Does your project comply with all applicable standards identified? ☑ **Yes** ☐ **No**

VIII. Best Available Control Technology

☑ Provide a complete evaluation of Best Available Control Technology (BACT) for your proposal.

IX. Ambient Air Impacts Analyses

Please provide the following:

☐ Ambient air impacts analyses for Criteria Air Pollutants (including fugitive emissions)

☐ Ambient air impacts analyses for Toxic Air Pollutants (including fugitive emissions)

☐ Discharge point data for each point included in air impacts analyses (include only if modeling is required)

- ☐ Exhaust height
- ☐ Exhaust inside dimensions (ex. diameter or length and width)
- ☐ Exhaust gas velocity or volumetric flow rate
- ☐ Exhaust gas exit temperature
- ☐ The volumetric flow rate
- ☐ Description of the discharges (i.e., vertically or horizontally) and whether there are any obstructions (ex., raincap)
- ☐ Identification of the emission unit(s) discharging from the point
- ☐ The distance from the stack to the nearest property line
- ☐ Emission unit building height, width, and length
- ☐ Height of tallest building on-site or in the vicinity and the nearest distance of that building to the exhaust
- ☐ Whether the facility is in an urban or rural location

Does your project cause or contribute to a violation of any ambient air quality standard or acceptable source impact level? ☐ **Yes** ☑ **No**

To request ADA accommodation, call Ecology at (360) 407-6800, 711 (relay service), or (877) 833-6341 (TTY)

[1] http://apps.leg.wa.gov/WAC/default.aspx?cite=173-460-150

Notice of Construction Application

Miscellaneous Metalworking Equipment Additions

2350 NE Hopkins Court

Pullman, Washington 99163

May 16, 2025

CONTENTS

Appendices

1 GENERAL INFORMATION

1.1 GENERAL FACILITY INFORMATION

Facility:	Schweitzer Engineering Laboratories, Inc. 2350 NE Hopkins Court Pullman, Washington 99163 Whitman County
Type of Facility:	Electronics Manufacturer
SIC Code(s):	3825, 3612, 3613, 3625, 3873, and 8711
Total Area of the Site:	132 acres

1.2 GENERAL FACILITY DESCRIPTION

Schweitzer Engineering Laboratories (SEL), Inc. is in Pullman, Whitman County, Washington. The site location is identified on the Appendix A.1 "Site and Surrounding Areas" map. The Pullman campus is the corporate headquarters for SEL. The campus is approximately 132 acres in size and is developed with 16 industrial and office buildings. The campus layout and building identifications are shown in Appendix A.2 "Pullman Campus Map".

The Schweitzer Engineering Laboratories (SEL), Inc. Pullman, Washington campus has been in operation in its current location for over 30 years. The Facility designs, manufactures, and supports a complete line of products and services for the protection, monitoring, control, automation, and metering of electric power systems. Most of the manufacturing operations occur in the 2440 and 2454 manufacturing buildings. Manual assembly also occurs in the 2350, 2535, and 2545 buildings (Government Services Buildings).

The Facility is not fenced; however, it is monitored by SEL Security 24 hours a day, 7 days a week. All building doors are locked and are accessed through secure employee key cards. SEL personnel are on-site 24 hours a day. Typical manufacturing operations occur 17.4 hours a day, 5 days a week. Overtime manufacturing typically consists of 3 additional hours a day and can include weekends. Overtime occurs when needed.

2 CONTACT INFORMATION

Facility Contact	**Responsible Official**
Michael Robert	Mike Wilfong
Senior EH&S Professional	Director of Environmental, Health, and Safety
509-592-7399	509-592-7800
michael_robert@selinc.com	mike_wilfong@selinc.com

3 PROJECT DESCRIPTION

3.1 PROJECT OVERVIEW

3.1.1 General

The Schweitzer Engineering Laboratories (SEL), Inc. Pullman, Washington campus is proposing the addition of several pieces of equipment related to electronic circuit soldering and a new soldering alloy, metal powder spray drying, and metalworking activities.

Soldering equipment proposed in this project includes the Versaflow 4/55 Solder Machine and Miniwave Solder Machines. A new flux chemical (AIM FX-16) is being added as an equivalent to Kester 959 and a new solder bar alloy (SAC305) is added as well.

Metalworking equipment proposed in this project includes MIG/TIG Welders, an IPG LightWELD 2000 Laser Welder, Timesavers Belt Sanders, and Amada Brevis 1212 AJ Laser Cutters.

A spray drying process with the GEA Niro Production Minor Spray Dryer is proposed to give SEL additional electrical component development capabilities with metal oxide powders.

3.1.2 Permitting History

In July 2014, SEL received a letter from Washington Department of Ecology stating air emissions from the on-site generators and paint booth exceeded the permitting threshold for toxic air pollutants (TAPs); therefore, SEL must submit a Notice of Construction (NOC) application. SEL submitted the application in December 2014 and received an Approval Order No. 15AQ-E610 on June 1, 2015. SEL did not agree with some conditions of this approval order and initiated an appeal process. In November 2015, SEL agreed to resubmit the NOC application as part of a settlement agreement with Ecology. Minor modifications were made to approval order conditions. SEL currently operates under Approval Order No. 15AQ-E638.

Additionally, SEL underwent the ISO 14001 Environmental Management System certification process in 2015. Possible environmental compliance gaps in regard to air permitting were identified during the audit process. SEL subsequently conducted an inventory of existing processes and equipment that should be included in a Notice of Construction Application resubmittal for air permitting.

An updated NOC application was submitted in May 2016 that included the sources identified in the 2014 NOC application as well as the sources identified by SEL that should be evaluated by Ecology. The May 2016 NOC application was modified in December 2016, June 2018 and again in March 2019 to reflect planning changes and decisions that occurred over that time. An air permit amendment was issued in November 2019.

The most recent air quality approval order was issued September 6, 2022 and included three replacement emergency generators and two replacement wave soldering machines.

3.2 PROCESS DESCRIPTIONS

3.2.1 Soldering Equipment

3.2.1.1 Versaflow 4/55 Selective Solder

The kurtz ersa Versaflow 4/55 selective solder machine (or equivalent) would be used to join electronic components to printed circuit boards by utilizing a liquid flux containing isopropyl alcohol (AIM FX16 or equivalent) that is applied to selected points using a spray head and a molten lead-free solder (Indium SAC 305 or equivalent) that is selectively applied by a nozzle. Solder alloys will be added to the process as a wire fed from a spool. Flux chemical will enter the process from bottles connected by tubing. This machine would be located at 2440 NE Hopkins Ct.

See Appendices C.1 “Versaflow 455”, C.2 “AIM SAC305 SDS”, C.3 “AIM FX-16 SDS”, and C.4 “Kester 959 SDS”.

3.2.1.2 PCBRM15 Mini-Wave Solder Machine

Miniwave solder machines (Air-Vac PCBRM15 or equivalent) would provide the capability to selectively solder and perform rework on through-hole components. Molten lead-free (AIM SAC 305 or equivalent) or leaded (Indium 106 Sn63Pb37 or equivalent) solders are pumped through a nozzle, forming a small wave. Solder temperatures do not exceed 600 degrees farenheit. Solder alloys are added to the machine in a bar form and liquid flux (AIM FX-16, Kester 959, or equivalent) are applied to component parts via brush or dipping in a small daily-use container. Two of these machines would be located at 2440 NE Hopkins Ct and two additional machines at 2454 NE Hopkins Ct. Two machines or less will utilize leaded solder alloys.

See Appendices C.5 “Air-Vac MiniWave PCBRM15”, C.2 “AIM SAC305 SDS”, C.6 “Indium 106 SDS”, C.3 “AIM FX-16 SDS”, and C.4 “Kester 959 SDS”.

3.2.1.3 BTU International Pyramax X5 150N Reflow Ovens

Reflow ovens would be integrated into surface mount technology (SMT) lines where they reflow solder pastes and cause surface-mounted electrical components to be electrically connected to the circuitry of a printed circuit board. Prior to the reflow oven, solder pastes (Indalloy with Indium 8.9HF types 106, SAC305 or equivalent) are printed on circuit boards through a stenciling machine. Parts placement machines set electrical components on top of the paste before the circuit boards enter the reflow ovens. The Pyramax ovens (or equivalent) provide a maximum temperature of 662 F to melt the pastes. 3D automated optical inspection machines scan the assemblies to confirm correct soldering. Six Pyramax X5 150N reflow ovens (or equivalent) would be located at 2440 NE Hopkins Ct.

See Appendices C.7 “SMT Process Diagram”, C.8 “BTU Pyramax”, and C.9 “Indium Solder Paste SDS”.

3.2.2 Conformal Coating Application Equipment

3.2.2.1 Specialty Coating Systems PrecisionCoat V

PrecisionCoat V Conformal Coating lines would apply an acrylic protective coating (Humiseal UV40 or equivalent) to circuit boards before UV light cures the material. The cured coating provides a protective

barrier that enables circuit boards to withstand harsh environmental conditions for 25 or more years. Four of these coating lines would be located at 2440 NE Hopkins Ct.

See appendices C.10 “SCS PrecisionCoat V” and C.11 “Humiseal UV40 SDS”.

3.2.3 Metalworking Equipment

3.2.3.1 Welding Equipment

Welding equipment would be utilized in support of research and development of new products, maintenance and fixing of equipment, and fabrication of parts to support other activities at SEL. Welding equipment would include MIG, TIG, Flux-core, and Laser technologies, all with HEPA-equivalent filtration (99.97% efficiency for PM 2.5 or less) for fume management. Proposed equipment includes the Miller Millermatic 211, Miller Multimatic 255, Miller Dynasty 210, Lincoln Precision TIG 275, and IPG LightWELD 2000. The welders would consume electrodes and wire from a variety of alloys encompassing steel, stainless steel, cast iron (nickel), and aluminum. The welding machines would be primarily located at 2440 NE Hopkins Ct with machines also located at 2535 and 2350.

See appendices C.12 “Millermatic 211”, C.13 “Multimatic 255”, C.14 “Dynasty 210”, and C.15 “Precision TIG 275”, and C.16 “LightWELD 2000”.

3.2.3.2 Amada Brevis 1212 AJ Laser Cutters

Two proposed laser cutters would cut parts from metal sheets in support of research and development, manufacturing operations, and other activities at SEL. The Amada Brevis 1212 AJ machines would provide cutting capabilities for steel, stainless steel, and aluminum alloys.

See appendix C.17 “Amada Brevis 1212AJ”.

3.2.3.3 Timesavers Series 2200 Belt Sanders

Timesavers belts sanders would provide surface finishing capabilities to the metalworking operations. One machine would be dedicated to aluminum parts sanding with the other machine serving steel and stainless steel materials. The Timesavers belt sanders would be located at 2440 NE Hopkins Ct.

See appendix C.18 “Timesavers 2200 Series”.

3.2.4 Spray Dryer Equipment

3.2.4.1 GEA Niro Spray Dryer Production Minor

The GEA Niro Spray Dryer Production Minor (or equivalent) would provide capabilities to transform a feed liquid into a dry powder in a one-step operation. Chemical products processed in the dryer include metal oxides that would be utilized in the production of electronic components. These metal powders include nickel (II) oxide, manganous manganic oxide, cobalt (II) oxide, and vanadium (V) oxide.

See appendices C.19 “GEA Niro Spray Dryer Specification”, C.20 “Cobalt Oxide SDS”, C.21 “Manganous Oxide SDS”, C.22 “Nickel Oxide SDS”, and C.23 “Vanadium Oxide SDS”.

4 STATE ENVIRONMENTAL POLICY ACT (SEPA) COMPLIANCE

A SEPA Review for the proposed equipment additions is included in this application is attached in **Appendix D.1 "2025 NOC SEPA"**.

5 CRITERIA AND TOXIC AIR POLLUTANT EMISSIONS ESTIMATIONS

The US Environmental Protection Agency has set National Ambient Air Quality Standards (NAAQS) for six principal pollutants, which are called "criteria" pollutants. These pollutants are carbon monoxide, lead, nitrogen dioxide, ozone (VOCs), particulate matter, and sulfur dioxide. Criteria pollutants are generated by soldering processes, metal powder spray drying, and metalworking equipment.

Permitting thresholds for Toxic Air Pollutants (TAPs) are provided in WAC 173-460-150. Emission thresholds consist of de minimis emissions values, small quantity emissions rates (SQER), and acceptable source impact levels (ASIL). Emissions above the de minimis thresholds but below the SQER and/or ASILs must be permitted. They require a Notice of Construction application submittal and may achieve permitting through a first tier permit review. Emissions greater than the SQER and ASILs may potentially achieve permitting through second and third tier petition reviews.

Best available control technology (BACT) is an emission limitation based on the maximum degree of reduction that can be feasibly achieved for each air pollutant emitted from any new or modified stationary source. Most Ecology permit writers determine BACT using a "top-down" approach as described in the EPA's draft New Source Review Workshop Manual: Prevention of Significant Deterioration and Non-Attainment Area Permitting (EPA 1990).

Control options for potential reductions in criteria pollutant and, as practical, TAP emissions were identified for the equipment included in this proposal. In Washington State, the term BACT refers to the control technology applied to achieve reductions in criteria pollutant emission rates. The term "tBACT" refers to BACT applied to achieve reductions in TAP emission rates. Available controls that are judged to be technically feasible are further evaluated based on an analysis of economic, environmental, and energy impacts. This section summarizes the findings and recommended BACT determination.

The following is a discussion of factors considered when calculating pollutant emissions from applicable processes identified in Section 3. Total estimated emissions of criteria and toxic air pollutants after the application of BACT and tBACT is shown in Appendix B.0.

5.1 SOLDERING EQUIPMENT

Metal oxides are created from the solder during operations due to agitation and elevated temperatures. While most oxides are captured as dross, some particles become airborne. A study was conducted by the School of Public Health at the University of Illinois regarding lead emissions generated during wave soldering. The study measured an average of 86 milligrams per hour per machine for uncontrolled lead emissions. This emission factor was used to estimate maximum potential emissions from SEL's soldering processes using lead solder. This factor is considered conservative for mini-wave soldering (PCBRM15 equipment) and SMT reflow processes (BTU Pyramax X5 150N) due to the surface exposure, agitation, and temperatures of the wave soldering process. Furthermore, this factor was used to estimate

maximum emissions of particulate matter (PM 2.5 and PM 10) and copper from lead and lead-free soldering processes. As shown in Appendix B.1, maximum potential lead emissions are 4.89 pounds per year, assuming 8,760 hours of operation of all soldering equipment and the existing filters installed on wave soldering machines. PM 2.5 and PM 10 emissions from soldering processes are estimated to be 0.027 tons per year and copper emissions are estimated at 2.54E-05 pounds per hour (less than de minimus threshold).

The wave solder machines use a solder flux (Kester 959 and AIM FX-16) that are isopropyl alcohol (IPA) based. Additionally, IPA is used to continually purge the spray fluxer heads when the machines are powered on. Isopropyl alcohol is a volatile organic compound (VOC) and a toxic air pollutant (TAP) in Washington. Furthermore, solder pastes that are melted in the SMT reflow process contain rosin, polyglycol ether, and carboxylic acid ingredients that are emitted as VOCs. Emissions calculations for VOCs IPA and from soldering processes are presented in Appendix B.1.

5.1.1 Soldering Process BACT

SEL retained SCS Engineers to conduct a BACT Feasibility Study for the wave solder and former transformer varnishing operations. The transformer coating operations at the time used a highly volatile varnish and thinner. SEL has ceased using this product, qualified a low-VOC, water-based varnish, and relocated the operation to another SEL facility outside of Washington. SCS' report details the different control technologies, their effectiveness, and estimated costs. The report is attached in Appendix E.

The following table 1 provides the cost per ton breakdown of the control technologies discussed in SCS' report. Maximum potential IPA emissions are discussed in the table below are based on continual operations 24 hours per day, 7 days a week at 15.02 pounds/hour and including proposed additional equipment and production increases, as shown in Appendix B.1. Potential emissions exceed 27,000 pounds per year of IPA.

Table 1: Wave Solder Control Technologies Cost Effectiveness

Control Technology	Estimated Costs (Capital + 1yr O&M costs)	Cost/ton of IPA emissions
Thermal Incineration	$2,870,000	$46,290
Recuperative Incinerator	$2,080,000	$33,548
Regenerative Thermal or Catalytic Oxidizer	$2,775,000	$44,758

As shown above, control technologies exceed the cost-effectiveness criteria values of $20,000 per ton of TAPs. Therefore, SEL will not be installing any of these technologies on existing operations.

To prevent exceedance of the SQER threshold for isopropanol, SEL is proposing voluntary consumption limits of 3,000 gallons per year of flux (Kester 959, AIM FX-16 or equivalent) and 500 gallons per year of pure Isopropanol, or an conservatively estimated equivalent of 5.50 pounds per hour of IPA emissions.

5.2 CONFORMAL COATING APPLICATION EQUIPMENT

The Humiseal UV40 chemical product applied in the Precision Coat V machine contains VOCs. The maximum estimated VOC emissions from this process are 0.19 tons per year, as shown in Appendix B.2.

5.3 METALWORKING EQUIPMENT

Metal particulate and fumes are generated by the cutting, sanding, and welding processes encompassed in the metalworking equipment category. In addition to the particulate matter criteria pollutants, toxic air pollutants are generated from each process. BACT has been identified for each process and voluntary limits have been proposed in particular cases to ensure applicable SQER thresholds are not exceeded.

5.3.1 Welding Equipment

Welding equipment will be installed with accompanying fume extraction equipment that achieves 99.97% removal of particulate matter and metal fumes. In addition, SEL proposes voluntary limits on electrode and wire consumption to ensure SQER thresholds are not exceeded, as shown in Table 2 below. Complete calculations are presented in Appendix B.3.1.

Table 2: Voluntary Welding Limitations

Electrode Type	**Quantity Consumed (lb)**		
	lb/hr	lb/day	lb/yr
Steel	68	68	17680
Aluminum	26	26	6760
Stainless Steel	70	70	18200
NI-99	77	77	20020

5.3.2 Amada Brevis 1212 AJ Laser Cutters

Laser cutters generate metal fumes and particulate emissions. The two proposed Amada Brevis 1212 AJ laser cutters would employe the best available technology of a Camfil GSXP6 filtration system (or equivalent) with stacked filters that achieve a combined 99.9958% removal efficiency for PM-2.5.

To prevent exceedance of TAPs SQER thresholds, SEL proposes voluntary limitations of cutting and piercing hours on the machines not to total the values shown in Table 3 below. Complete calculations are presented in Appendix B.3.2.

Table 3: Voluntary Limits on Cutting and Piercing Time

	Minutes Per Hour(1)	Hours Per Day(1)	Hours Per Year(1)	Avg Hours Per Month
Stainless Steel	120	24	6240	520
Aluminum	120	24	8760	730
Steel	120	24	6240	520

(1) All time values are cumulative across 2 machines (ex. 120 minutes is only achievable in one hour across 2 machines).

5.3.3 Timesavers Series 2200 Belt Sanders

Belt sanding equipment with medium to fine grit ratings (80-120) will produce metal dust and particulate matter emissions. One belt sander would be utilized for stainless steel and steel alloys with potential to emit manganese, nickel, phosphorus, and trivalent chromium. The other belt sander would be dedicated to aluminum alloys with potential to emit copper, manganese, and trivalent chromium. Both sanders will be equipped with tBACT in the form of wet dust collectors and HEPA filters to achieve a combined capture efficiency of 99.997% for PM 2.5.

To prevent exceedance of TAPs SQER thresholds, SEL proposes voluntary limitations on sanding area not to total the values shown in Table 4 below. Complete calculations are presented in Appendix B.3.3.

Table 4: Timesavers Belt Sanders Voluntary Limits

	Count of Sheets (48" x 48")			Square Feet Sanded		
Throughput Limit	Stainless Steel	Steel	Aluminum	Stainless Steel	Steel	Aluminum
Per Minute	8.4	8.4	8.4	135	135	135
Per Hour	506	506	506	8100	8100	8100
Per Day	4500	5000	12150	72000	80000	194400
Per Year	10000	10000	3159000	160000	160000	50544000

5.4 SPRAY DRYER

The GEA Niro Spray Dryer Production Minor (or equivalent) will have potential to emit particulate matter (PM 2.5) and metal TAPs. Metal powders used in the machine could emit manganese, nickel (II) oxide, cobalt, and vanadium pentoxide. The system will be equipped with BACT including a cyclone separator, wet scrubber, and a final exhaust filter with a removal efficiency of at least 99.90% for PM 2.5. Complete calculations are presented in Appendix B.5.4.

6 EMISSIONS STANDARD COMPLIANCE

SEL's emissions are subject to WAC 173-400-113 (1)–(3), as shown below, and WAC 173-460-150.

(1) "The proposed new source or modification will comply with all applicable new source performance standards, national emission standards for hazardous air pollutants, national emission standards for hazardous air pollutants for source categories, emission standards adopted under chapter 70.94 RCW ….."

(2) "The proposed new source or modification will employ BACT for all pollutants not previously emitted or whose emissions would increase as a result of the new source or modification."

(3) Allowable emissions from the proposed new source or the increase in emissions from the proposed modification will not cause or contribute to a violation of any ambient air quality standard…"

As described in this application, SEL will employ BACT to emission points generating significant quantities of criteria or toxic air pollutants on-site.